

Application No.: 09/752,573  
Amendment dated: February 13, 2006  
Reply to Office Action dated: July 18, 2005

### AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method , comprising:
  - selecting an initial sequence of instructions for inclusion in a trace cache line;
  - determining a set of rename resources needed for said trace cache line on a per-packet basis based on relationships between the initial sequence of instructions;
  - adding one or more provisional instructions to said trace cache line to create a provisional trace cache line;
  - repeating said determining for said provisional trace cache line;
  - comparing said set of rename resources needed for said provisional trace cache line to a rename capacity; and
  - accepting said one or more provisional instructions for inclusion in said trace line and repeating said adding, or rejecting said one or more provisional instructions, based on said comparing.
2. (Original) A method in accordance with claim 1, wherein:
  - said set of rename resources needed and said rename capacity include a source parameter.
3. (Original) A method in accordance with claim 1, wherein:
  - said set of rename resources needed and said rename capacity include a destination parameter.

Application No.: 09/752,573  
Amendment dated: February 13, 2006  
Reply to Office Action dated: July 18, 2005

4. (Original) A method in accordance with claim 1, wherein:  
said set of rename resources needed and said rename capacity include a line size  
parameter.
5. (Previously Presented) A method in accordance with claim 3, wherein:  
determining a set of rename resources needed on a per-packet basis excludes destinations  
subsequently over-written within the packet from said set of rename resources needed.
6. (Previously Presented) A method in accordance with claim 2, wherein:  
determining a set of rename resources needed on a per-packet basis excludes redundant  
sources within the packet from said set of rename resources needed.
7. (Previously Presented) A method in accordance with claim 2, wherein:  
determining a set of rename resources needed on a per-packet basis excludes sources  
created within said trace cache line.
8. (Original) A method in accordance with claim 1, wherein:  
selecting said initial sequence of instructions uses a worst case assumption of said set of  
rename resources needed.

Application No.: 09/752,573  
Amendment dated: February 13, 2006  
Reply to Office Action dated: July 18, 2005

9. (Original) A method in accordance with claim 1, wherein:  
selecting said initial sequence of instructions includes tabulating a maximum rename resource cumulative total based on a plurality of instruction types.
10. (Original) A method in accordance with claim 1, wherein:  
selecting a number of provisional instructions is performed based on a difference between said set of rename resources needed and said rename capacity.
11. (Currently Amended) An apparatus, comprising:  
an instruction stream with a plurality of instructions;  
a trace cache line to receive said instructions from said instructions stream;  
a packetized instruction resource calculator to determine a set of rename resources needed for said instructions in said trace cache line based on relationships between the instructions; and  
an instruction adder, responsive to said packetized instruction resource calculator, to add one or more instructions to said trace cache line from said instruction stream while said set of rename resources needed is less than a rename resource capacity.
12. (Original) An apparatus in accordance with claim 11, wherein:  
said set of rename resources needed includes a source parameter.

Application No.: 09/752,573

Amendment dated: February 13, 2006

Reply to Office Action dated: July 18, 2005

13. (Previously Presented) An apparatus in accordance with claim 12, wherein:  
said set of rename resources needed included a destination parameter.
14. (Original) An apparatus in accordance with claim 11, wherein:  
said set of rename resources needed includes a line size parameter.
15. (Original) An apparatus in accordance with claim 14, wherein:  
said set of rename resources needed includes a source parameter.
16. (Original) An apparatus in accordance with claim 15, wherein:  
said set of rename resources needed includes a destination parameter.
17. (Previously Presented) An apparatus in accordance with claim 13, wherein:  
said packetized instruction resource calculator excludes destinations subsequently over-written within said trace cache line from said set of resources needed.
18. (Original) An apparatus in accordance with claim 17, wherein:  
said packetized instruction resource calculator excludes redundant sources with said trace cache line from said set of resources needed.

Application No.: 09/752,573

Amendment dated: February 13, 2006

Reply to Office Action dated: July 18, 2005

19. (Original) An apparatus in accordance with claim 18, wherein:  
said packetized instruction resource calculator excludes sources created within said trace cache line.
20. (Previously Presented) An apparatus in accordance with claim 11, wherein:  
said trace cache line is loaded with an initial number of instructions.
21. (Original) An apparatus in accordance with claim 20, wherein:  
said initial number of instructions is calculated as a fraction of said rename resource capacity.
22. (Currently Amended) A method , comprising:  
determining the number of instructions in cache lines using a packetization of instructions technique and a dynamic cache line size;  
matching said dynamic cache line size to a rename unit capacity based on relationships between the instructions.
23. (Original) A method in accordance with claim 22, wherein:  
matching said dynamic cache line size includes eliminating redundant register references within the cache lines.